

Measure Up

Winter 2009–2010

Assessment news for eighth-grade teachers



Did you know?

- NAEP 2010 will include assessments in geography, U.S. history, and civics.
- Approximately 870 eighth-grade public schools and 34,000 eighth-grade students will participate in NAEP 2010.
- Assessments will be conducted from January 25 to March 5, 2010.

2009 Mathematics Results Released

Nationally representative samples of more than 330,000 fourth- and eighth-graders participated in the 2009 National Assessment of Educational Progress (NAEP) in mathematics. At each grade, students responded to questions designed to measure their knowledge and abilities across five mathematical content areas (number properties and operations; measurement; geometry; data analysis, statistics, and probability; and algebra).

Gains in students' average mathematics scores seen in earlier years continued at grade 8. The upward trend seen in earlier assessments for eighth-graders continued with a 2-point increase from 2007 to 2009.

A similar pattern of results was seen for students performing at different achievement levels. The percentages of eighth-graders performing at or above Basic (73 percent) and at or above Proficient (34 percent) in 2009 were higher than in 2007 and higher than in all earlier assessment years.

At grade 8, average mathematics scores were higher in 2009 than in both 2007 and 1990 for most racial/ethnic groups; however, gaps between White and Black students and between White and Hispanic students showed no significant change in comparison to either year.

Although the average score for eighth-grade public school students increased from 2007 to 2009 and the score for private school students showed no significant change over the same period, there was no significant change in the gap.

National Center for Education Statistics (2009). *The Nation's Report Card: Mathematics 2009*. (NCES 2010-451). Institute of Education Sciences, U.S. Department of Education, Washington, D.C.

Sample math skills for Grade 8

- 41% correctly solved a problem using division.
- 51% identified the length of a rectangle in terms of its width.
- 71% identified the solution from a graph of linear equations.



To access additional data from the school, teacher, or student questionnaires, please visit <http://nces.ed.gov/nationsreportcard/naepdata>

It is important to know...

In 2010, assessments will be administered in the following subject areas:

- Civics
- Geography
- U.S. History
- Mathematics special study (grades 4 and 8 only)
- Writing pilot

Thank You Teachers!

For the NAEP 2009 assessment, teachers were asked to complete a questionnaire asking them about their previous educational experiences and current teaching practices. The valuable time that teachers spent completing these

questionnaires contributed greatly to the overall data collected from this assessment. The goal of these questionnaires is to provide state-specific examples of the information gathered.

Sample Questions from Teacher Questionnaire:

How many hours of mathematics instruction do your students receive in a typical week?

- A) Less than 3 hours
- B) At least 3 hours, but less than 5 hours
- C) At least 5 hours, but less than 7 hours
- D) 7 or more hours

Are students assigned to this class by ability?

- A) Yes
- B) No

Do you create groups within this class for mathematics instruction on the basis of ability?

- A) Yes
- B) No

Approximately how much mathematics homework do you assign to students in this class each day?

- A) None
- B) 15 minutes
- C) 30 minutes
- D) One hour
- E) More than one hour

What kind of calculator do your students usually use during mathematics lessons?

- A) None
- B) Basic four-function (addition, subtraction, multiplication, division)
- C) Scientific (not graphing)
- D) Graphing

Are computers available for use by you or your students?

- A) Yes, computers are available to my students and to me.
- B) Yes, I have access to computers, but my students do not.
- C) No, neither my students nor I have access to computers at school.

Which of the following statements best describes how well your school system provides you with the materials and other resources you need for mathematics instruction?

- A) I do not have the resources I need.
- B) I have some of the resources I need.
- C) I have most of the resources I need.
- D) I have all of the resources I need.

Writing is a pilot assessment in 2010.

The writing assessment (grades 4, 8, and 12) is based on a newly developed writing framework and will be piloted at a limited number of schools in preparation for the larger 2011 assessment. At grade 4, the writing assessment will be administered with paper and pencil. For the first time, computer-based writing will be assessed in grades 8 and 12, using word processing software with commonly available tools. For more details, visit <http://www.nagb.org/publications/frameworks/2011naep-writing-framework.doc>.

Eighth-Grade Teachers:

Professional Development Activities

Teachers of eighth-graders who took the NAEP mathematics assessment in 2007 were asked to what extent they had learned about various educational topics during the last two years of professional development. The table below ranks these topics from high to low in terms of extent of learning. Of National Public students, more than 60 percent have teachers who reported that they learned about content standards in mathematics, preparation for state assessments, instructional methods, curricular materials, and how students learn mathematics during professional development activities.

Percentage of National Public Students Who Have Teachers Who Learned About Various Topics To a Moderate or Large Extent During Professional Development

Topic	Moderate or Large Extent
Content standards in mathematics	83%
Preparation of students for district and state assessments	73%
Instructional methods for teaching mathematics	70%
Curricular materials available in mathematics (units, texts)	69%
How students learn mathematics	62%
Methods for assessing student in mathematics	54%
Effective use of manipulatives in mathematics instruction	49%
Mathematics theory or applications	44%
Use of computers or other technology in mathematics instruction	44%
Effective use of calculators in mathematics instruction	41%
Strategies for teaching mathematics to students from diverse backgrounds (including English language learners)	32%
Issues related to ability grouping in mathematics	30%

NOTE: Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessments.

NAEP Findings from Past Assessments:

Eighth-graders whose teachers reported asking students to discuss interpretations of readings once or twice a month or more had higher scores in reading than students whose teachers reported that they never or hardly ever did so. (Reading 2007)

Eighth-graders whose teachers reported they had an undergraduate or graduate major in mathematics education scored higher than students whose teachers did not have a major in mathematics education. (Mathematics 2007)

Eighth-graders whose teachers reported having a leadership responsibility for science education at their schools scored higher than students who did not have this leadership responsibility. (Science 2005)

Eighth-graders whose teachers reported participating in a professional development workshop or training session on history scored higher than students whose teachers did not participate in this type of professional development activity. (Civics 2006)

Eighth-graders whose teachers reported having a Master's degree scored higher than students whose teachers reported having a Bachelor's degree. (U.S. History 2006)

Eighth-grade students asked by their teacher to write more than one draft of a paper, scored higher than students whose teacher did not ask them to write more than one draft. (Writing 2007)

What is The Nation's Report Card™ ?

The Nation's Report Card™ informs the public about the academic achievement of elementary and secondary students in the United States. Report cards communicate the findings of the National Assessment of Educational Progress (NAEP), a continuing and nationally representative measure of achievement in various subjects over time.

For more than three decades, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, U.S. history, civics, geography, and other subjects. By collecting and reporting information on student performance at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information related to academic achievement and relevant variables is collected. The privacy of individual students and their families is protected, and the identities of participating schools are not released.

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